

2050

Diag.C.L. Nos. 6380-1 & 6450-1

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey

Hydrographic

Field No.

Office No.

21050

LOCALITY

State

Washington

General locality

Skagit

Locality

Bay and

Vicinity

194

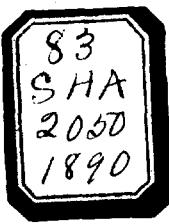
1890

CHIEF OF PARTY

J. M. Jordan

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DATE



2050

U. S. COAST AND GEODETIC SURVEY.

T. C. Mendenhall, Superintendent.

State: Washn.

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2050.

LOCALITY:

Skagit Bay
and
Vicinity.

1890

CHIEF OF PARTY:

Lieut. J. N. Jordan, U.S.N.

2050
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JUL 29 1891. 014846

Give here full address to which reply should be sent: Olympia, Thurston Co., Wash.

U. S. Coast and Geodetic Survey,

S. C. Earle

January 12, 1891.

Dr. J. C. Mudiehall

Superintendent C. & G. Survey
Washington, D. C.

Sir;

In obedience to your circular of July 3, 1890,
I have the honor to submit the following
report of

Skagit Bay and Vicinity.

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The greater part of this Bay is a mud-flat
intersected with numerous sloughs from forty (40)
metres to one (1) metre in width, these sloughs
spreading out during their course and forming
sand bars with less than a foot of water
thereon at low water; and even in the more
narrow portions, where there is from three (3) to six
(6) feet of water, their course is so tortuous as
to make it difficult to pass an ordinary

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whale-boat up the channel at low water.

This is a good ships channel with plenty of water passing through the Bay, on the western or Whidby Id. side, connecting Saratoga Passage with the Straits of Juan through Deception Pass.

The only harbor on this sheet is at the North end in Similk Bay, and between Hope and Skagit Id's. where good anchorages may be found in from two (2) to ten (10) fathoms, with good holding ground, and well sheltered from winds from any direction. Vessels may anchor in the main ships channel after passing Utsalady until up to Hope Id. in from five (5) to twenty (20) fathoms of water, but will be exposed to southwesterly gales, a strong current, in a narrow fairway, and many small streams using this channel day and night as well as an occasional low of logs nuding most of the channel at low water.

The Stillaguamish River empties partly into Port Susan to the S.E. and by two principal mouths into the S.E. corner of Skagit Bay. It is navigable for light draught steamers during the time of freshets about twenty (20) miles up, but at the time of this survey the run was only made once to my knowledge and spoken of as a difficultfeat, by a small

stream drawing not over four feet. A small naptha launch made daily trips from Winslow to Stanwood, about a mile above the mouth of the Stillaguamish. This launch had a draught of only three and a half ($3\frac{1}{2}$) feet, but even this boat had to wait about two hours after the lower low waters before attempting to steam up the channel across the flats. Immense quantities of logs are floated down the more southern of the two mouths into this Bay and caught by a boom held in place by long rows of dolphins.

The Skagit River empties into the Bay on the East side through a delta whose outer channels are known locally as the North and South Forks. Between these are numerous cross channels and sloughs, most of which have little or no water therein, at low water, during the dry season in December and January. The South Fork and Steamboat Slough is the channel used by steamers running up the River. The North Fork is closed by a log jam about three (3) miles above its mouth. Two small steamers made regular tri-weekly trips from Seattle to Mt. Vernon, four or a half ($4\frac{1}{2}$) miles above the mouth of the Skagit.

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and only once did I hear of their going above this point. Although these steamers drew less than five (5) feet loaded, they were compelled to wait for tides to help them up the channel across the flats. An occasional small stern-wheel steamer carried supplies to logging camps up the Skagit and towed out rafts of logs, that are floated down to the mouth and caught in booms similar to those at the mouth of the Stillaguamish.

The shores on the windward side rise quite sharply until up to a bay, a steep bank above high water mark from fifty (50) to seventy (70) feet high. To the N.E. of this signal a flat begins to make out, attaining its greatest width just off the entrance to Dugalla Bay. The bluff along shore continues as far as a cove, after which it gradually falls off until in Dugalla Bay the shore is flat and swampy. On the north side of Dugalla Bay the shore rises again and becomes a bluff or very steep until just opposite Haze Id., where a sand and gravel spit makes out leaving a passage here of a quarter of a mile wide. Below high water mark the beach is very shelving out to low water mark

when it falls off suddenly to deep water. Along the East side of the Spit the beach is quite steep, a flat then begins and continues until up to a head. The shore above high water mark rises quite sharply until well into the Bay on the S side of Big Snif Id. when it is low and swampy. Below high water mark the beach is steps up to the mouth of the above mentioned Bay, within which it flat or very shelving. Scattered boulders lie along shore and extend under water to the S of off a head and off a Snif. Both sides of Deception and Canoe Passes, the islands Big and Little Snif, and Stann Id. are rocky and bold. Outside the Pass on the South shore are short stretches of gravel beach with rocky ledges between them, and the shore inland falls away to seawards. On the North side the shore retains its high and rocky character beyond the limits of the sheet. To the E of Canoe Pass it is the same as far as a Eagle and here the cliffs attain their greatest height. Under water the beach retains the same rocky and precipitous character as above. To the E of a Eagle is a small sight, the shore rises less abruptly and the beach a gentle descent.

After passing this bight, around the point on which
is a Tom the shore is rocky with ledges extending
out a short distance under water, but are not ^{as}
steep and high as farther seaward. It is not
until we enter into the next bight to the E^E that
the shore changes to a stony and gravel beach,
and just back of this on a gentle slope where
seaward front is from twenty (20) to thirty (30) feet
above the water is Discretion Po. or Tidalg City.
A wharf extends out from this bight. To the E^E
and N^N as far as a cable the shores alternate
with steep clay bluffs, when the ridges come down
to the beach and have been worn away, and
stretches of low beach in front of the valleys.
Sand and gravel beach extend out at a gentle
descent along the whole distance with many
scattered boulders near a Bluff. A wharf has
been built out about a hundred (100) meters west
of a Bluff. Between a ^{Bluff} and a Bluff is the town of Gibral-
tar. Between a cable and a Point is a low bight
with a sand and mud flat in front. From
signals Point to Stub the shore is steep and rocky.
In the bight in which is a Shanty the shore is low
and a slough extends some distance to the N^N

with little or no water thrown at low water, and a mud and sand flat in the right. On the east side of Similk Bay the land rises quite abruptly as far as a rock, a sand and gravel beach with scattered boulders having a gentle descent under water and forming a flat near a rock. At a rock a low sand and gravel spit connects a high rocky point, extending towards Skait Id. with the main island. A right on the N.W. side of this point nearly cuts it into just to the E^E of a fasten. A gravel spit connects the two rocky parts of this point. The N.W. side is bold close to, and a ledge extends under water at the west end. Skait Id. has a rocky shore on all sides, steep and high to the west, and extending out under water in a rocky ledge to the E^E. The S shore of the point making out from a rock is less rocky than the N. side and has a shelving beach of sand and gravel with cobble stones. Between a rock and a stake the beach is gravel and cobble stones except at a pass and just to the E^E where there are rocks and ledges extending under water. The land rises into hills and become quite steep and high near a stake, the point on which this signal is situated being bold and rocky.

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Haps Id. is of a rock formation, and its shores bold and steep, especially on the S and W sides where there are rocky cliffs at the water's edge. The Tocano Id's., Ids. Nos. 1 and 2, and the Seal Rocks are only large outlying rocks. The Tocanos are covered with stunted fir and spruce and are used by the Indians for a burial ground. Seal Rocks may be approached close to on the W and SW sides, but run off into ledges under water to the E and N.E. Goat and Ika Id's are of the same character as Haps Id., but are surrounded by mud and sand flats. After passing the rocky point on which is a Stake there is a light with a gravel beach, and here the rocky cliffs recede some two hundred meters from the shore line, only to come out higher and more bold in the point on which is O Aune, maintaining this character on both sides of the entrance to the Swinomish Slough, this entrance being known locally and by all steamboat men as "The-Hole-in-the-Wall". The flats begin to make out from just opposite the North Tocano Id. and extend around all this shore, except where the shallow channels to the North Fork cuts in to the shore as will be described.

just after passing through "The-Hole-in-the-wall"
the rocky bluff on the port side recedes to
the W^d, coming out again opposite the ^{town of} La Conner
though much lower than to the S^d. In this
bight is a low grassy flat nearly covered
at high water. On the starboard side the flat
runs through to Skagit Bay, at high water
making an island out of the rocky land
to the E^d of The-Hole-in-the-wall. Just to
the N^d of this flat the land is somewhat
higher, and still farther north a slough makes
off to the E^d, this is crossed by a causeway
to the town of La Conner. Above La Conner
the Swinomish flats extend to the N^d and E^d
consisting of dyked land with tide gates,
upon which is raised immense quantities
of oats and hay. On the w side of the slough
above La Conner the high land gradually
recides to the w^d as the slough approaches
Padilla Bay leaving a flat between it and
the slough.

Just at the mouth of the North Fork of
the Skagit River on the north side is an

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bald rocky point on which is a Bald.
At very high tides and freshets this point
is an island, as a low marsh is between it
and the high land on the right bank of the
North Fork on the main-land.

Between a Bald and a Hancock is the delta
of the Skagit, all of it low and marshy, and
intersected with numerous sloughs, much of it
has been reclaimed by dykes, is very rich, and
is included in the "Skagit Valley", the best farm-
ing land in western Washington. The shore
along this delta is so flat a whale-boat drawing
only two (2) feet of water can not approach within
a hundred (100) yards of the shore at ordinary high
water unless following one of the narrow winding
sloughs. An exception to this is at a Rock which
is on a rocky isle, of very limited extent, rising
sixty or seventy feet above the surrounding flat.

The high bluffs on the mainland are about
three-quarters of a mile back from high water
mark near a Hancock the receding to the
edge up the valley of the Stillaguamish River
The delta of the Stillaguamish and the sloughs
connecting Point Susan are at the same

"

character as the delta of the Skagit River. On Canano Id the land gradually increases in height until at a Brown it comes a steep bluff some fifty (50) feet high. In front of this is a low marsh covered at the highest tides that gradually narrows until it comes in to the bluff at a Brown. At a spit is a low, sand, mud, and shell ridge. The narrow winding channel to the Stillaguamish has its general course along this marsh, most of it not more than thirty (30) meters distant.

The whole shore around the Bay is covered with forests of Fir, Spruce, and Alder except where small clearings have been made and on the dried lands on the flats. The islands, Stann, Little Snuff, Seal Rocks, Nos. 1 and 2, and the rocky point on which is a Fort are bare and rocky. The S.W. side of Skagit Id and the S.E. side of Goat Id are bare at times. All of the above bare spots have a yellowish appearance from the dried grass with which they are sparsely covered.

On the Bay and Rivers the only vessels engaged in the carrying trade are three small stern-wheel steamers, belonging to the Mill and Boom Co. at Ulalady, that tow rafts of logs from the mouths of the Skagit and Stillaguamish Rivers to Ulalady and carry supplies to the logging camps and a small native launch that made daily trips from Ulalady to Stanwood.

From ports not on the shore a very large number of steamers pass through this Bay, most of them touching at Ulalady.

Two small stern wheel steamers made regular bi-weekly trips from Seattle to Mt Vernon up the Skagit River, stopping at any landing to take on or put off freight or passengers.

Almost all the freight and passenger steamers flying between Tacoma, Seattle, etc to the northern ports of Anacortes, Fairhaven, Whatcom, and Blaine, as well as the islands of Washington Sound, pass through Skagit Bay and Deception Pass. Many rows of logs from the Ad bound to the mills up Sound make use of this

passage to escape the rough weather they are liable to meet in passing to the west of Whidby Id. through the Straits of Guadalupe.

The daily mail steams passing through the Bay would steam up to La Conner when the tides were right, and when prevented would stop near Seal Rocks and send the mails, etc. up in a small boat, sometimes being obliged to wait there two or three hours. An occasional steam freight schooner of light draught was the only other vessel that made trips to La Conner.

Small tugs make use of the Swinomish Slough, when the tides run right and the weather is bad outside. A railroad has been built across this slough, on the route from Sedro to Anacortes, since the last survey of Padilla Bay. This road crosses about two (2) miles above the limits ^{of the hydrography} of this sheet and closes all the branches of the slough except the western one, where a draw bridge was put in. Complaints were made that the draw was not at right angles to the slough and impeded navigation.

In approaching Strait Bay from seaward two courses lie open to vessels, the shortest through Desolation Pass, the other around the S. end of Whidby Id. through Saratoga Passage.

In coming in to the N.E., after passing Desolation Id. keep close along the North shore to find the best water, not more than a ship's length off until passing the stake light in front of a N.W. Pass, when a straight course should be made through Desolation Pass, and if not at the stand of high or low water, great care should be used to keep in mid-channel, as the tidal currents run from five to six knots at half tides, and strong eddies are formed along the shores, with a bow in the eddy and stern in the current the helm is useless. The regular stream using this route passes through with little difficulty at all stages of the tide, but a stranger should anchor and wait for slack water. This slack lasts but a short time, usually not more than ten minutes, when the current begins to run swiftly in the opposite direction. Each shore may be approached close to in the Pass until past Stann Id. when the authority

ledge on the whidby Id. shore should be avoided.
 Little Tuff Id. may be passed on either side
 but if to the S^E keep over towards Big Tuff to
 avoid a rock on the S side of Little Tuff.
 After passing the Tuff Ids. keep in mid-channel or on the North side till well past the
 N.E. point of Whidby Id. when the course may
 be changed to the E^E and S^E to pass close to
 Skait Id. A straight course may be laid from
 him to the W. end of Hape Id. keeping a range
 to prevent being swept over towards the Whidby
 Id. shore. Pass between Hape Id. and Ale
 Spit nearest the Hape Id. side and lay a
 course just to the W^E of Dial Rocks. From
 about four or five ship lengths to the W^E of
 these rocks lay a course to clear Olney Pt.
 about a quarter of a mile. Olney Pt. shows
 from him as the farthest point to the S^E on the
 Whidby Id. shore. From Dial Rocks to Olney Pt.
 is the most difficult part of the channel in
 the Bay, there are no good natural ranges,
 the tidal currents are very variable in force
 and direction, and the channel rises sharply
 to the mud-flats on each side as to make

the lead of little use, by keeping a close watch on the Whidby Id. shore and the lead going on this side, the current bank at the channel may be followed. After passing Olney Pt. the channel rises less abruptly on the W. side and may be followed by keeping the lead going constantly, being careful to keep in enough water to avoid the scattered boulders off a bar and to the S.E.

If wishing to anchor in Similk Bay, after passing Whidby Id., keep near Skagit Id. than the N. shore until the E. end of Skagit Id. bears abeam then head up middle of the Bay, where a good anchorage may be found in from two (2) to ten (10) fathoms of water. Between Skagit and Hape Id's a good anchorage may be found by shoving out of the main channel, but to keep out of the currents that flow with considerable velocity around both ends of Hape Id., anchor about midway along the Hape Id. shore with room enough to swing clear of the break.

If bound to La Connor or up the N. Fork of the Skagit change course to the E^d when

a quarter of a mile N. of Seal Rocks and head directly for the Stake light on the S. end of Fidalgo Id. Keep this course until the bluff on the N. side of the North Fork comes in range with the S. side of Fidalgo Id. Keep this range till well past Island No. 2 when a sharp turn should be made to the S^d, heading directly for the W. end of Ika Id. After running this course a quarter of a mile make a sharp turn to the N^d and head for the bold point at the mouth of the North Fork until nearly up to "The-Hole-in-the-Wall", when the course should be altered to stand into it in mid-channel. Pass the first Stake light and head for the S. end of a small wharf with a row of piles to the N^d. Hug the east shore close to till past the second Stake Light and keep the same compass course beyond it a short distance. Both banks of the Slough here are low and marshy, and the best water may be found by keeping on the eastern shore using the lead frequently and shooting off

with starboard helm. When abreast the third Stake Light stand well over to center of channel and gradually approach the W shore, follow this shore until midway between two rocky points on W bank when course may be laid straight for S end of La Canna wharf. This will make the course in mid-channel and lies parallel to a cause-way crossing a marsh to the E. When near the S wharf the best water is found close to and parallel to the wharf front. Above the town of La Canna the channel is tortuous and frequently obliterated by bars of shifting sand. As a general rule the deepest water follows the E. shore, but at several points it is necessary to cross over to the West bank to avoid sand bars.

If bound up the North Fork, after passing "The-Hall-in-the-Wall" keep near the R shore until the West edge of the marsh bars Abram, when the course should be changed to head for the S. end of the bald point at mouth of the river. Pass this close to and stand up the river keeping on the bank the current is cutting into.

To cross the flats to the mouth of the S. Fork of the Skagit River, vessels should come in by Misalady, and run to clear Browns Pt. a quarter of a mile to the N $\frac{1}{2}$, when the Pt. bears one point abaft the beam had directly for Mt. Baker until buoy No. 2 is picked up; passing this buoy on the port hand a sharp turn to starboard should be made, had for a very round top peak of the Cascade Mountains, which bears from this position about half way between the mouth of the Stillaguamish and that of the S. Fork of the Skagit. Run this range until buoy No. 4 is picked up, pass this to port as well as all the other buoys of the channel leading to the mouth of the S. Fork. All of these buoys may be passed close to except buoy No. 4 which should be left at least a quarter of a mile on the starboard side. Enter the mouth of the River in the channel that comes out by the Stake Light, and stand up Steamer Slough until it comes into

the South Bank. The deepest water will be found along the bank the current is cutting into, but a close watch must be kept for broken water indicating a snag or swamp.

The passage across the flats to the mouth of the Stillaguamish winds and turns so much that no directions can be given to follow its course, and it would take a buoy every hundred meters to mark its channel.

The three channels, to La Conner and Mr. Bank, to the S. Bank, and to the Stillaguamish are of a changeable nature, during the freshet season a large amount of mud and sand is brought down and, meeting the in-coming tide, is deposited to form small bars, if a water-soaked stump or log grounds upon these bars they become permanent, otherwise the bar is swept away by the ebb current to be piled up in another place.

Slimmers using these channels regularly

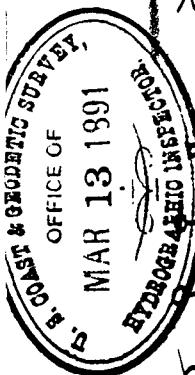
do not escape grounding and from conversations with their masters these incidents are more the rule than exception. If a few more buoys were placed across the flats along the channel to the S. Fort, and range lights were placed at the mouth, instead of the single one, it would be a great aid to steamers. The buoys are so far apart it is difficult to pick them up. Dolphins might be used to a better advantage. A few buoys or piles could be planted to advantage between Seal Rocks and "The-Hole-in-the-Wall".

The main channel through the Bay on Whidby Id. side should be marked on the East side with buoys, especially on the end of the sand spit that has made out from the flats in front of Whidby. Vessels bound through the Whidby Id. shore and twice during the course of the survey in these waters vessels grounded on that side. The edge of the channel on the East side is so

Special attention is requested
called to this P.S.

Chas. H. Thomas, Commr., C. & G. Surveyor.

H. H. Holmes, Hydrographic Inspector.



abrupt a vessel trying to keep along that side with the lead would ground on the flats before the course could be changed.

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In the main channel leading through the Bay, the water gradually shoals from twenty (20) fathoms at the South end to four and a half ($4\frac{1}{2}$) fathoms just to the S^d of Seal Rocks. After passing these rocks the depths varies from nine (9) to thirty (30) fathoms out through the Pass to seawards. The small channels across the flats vary from one (1) to six (6) feet and are very liable to change.

If the main channel through the Bay is kept no dangers will be encountered. The only trouble is in judging the distance to be kept from the whidby I'd show. A constant use of the lead will assist very much till as far North as Olney pt. About half a mile North of sea Spit a second spit seems to be forming under water

but can easily be avoided by running to the ~~ad.~~ a ledge of rocks, with about eighteen (18) feet of water thrown, runs out in continuation of the shore line to the W^E of a low well into the right. On the S.W. side of Little Snuff Id. is a rock under water about twenty (20) meters from shore, so the south shore of this Id. should not be hugged too closely. On the north shore of Whidby Id., about half way between the Snuff Id's. and the East end of Stann Id. is a low-lying ledge bare at low water. It is about thirty meters from the shore and prevents hugging this shore to get out of the current. Outside the Pass vessels drawing over fifteen (15) feet of water should keep well along the north shore to avoid a bar that seems to be forming just abreast the Stake Light. In Similes Bay a shoal has been formed on the north side, just abreast Skait Id., and vessels should keep well out in the Bay to avoid it, and vessels should sweep well to the S^E and E^S in coming to the

wharf at Gibraltar to avoid a small spit to the ws of the wharf. Just north of the wooded portion of the point on the S. side of the Bay is a ledge, about thirty(?)metres from shore, entirely bare at low water. A vessel turning in the Bay at high water might strike it, if too close along this shore. Ledges extend out from the East side of Skait Id. and the west end of the point to the E^d, and in passing through this passage, the N.E. side of Skait Id. should be hugged close then steer across to the S.W. side of the point to clear both ledges. Two small ledges run out from Gudalgo Id just opposite Hape Id. There is no passage leading from the deep water north of the Socano Id's. the flats extending towards Hape Id between Seal Rocks and the Socanos. A ledge just bare at low water lies in line with Island No. 2 from Seal Rocks, distant about thirty (30) metres to be avoided in passing close to on the East side of these rocks. A sharp pinnach rock is in the channel leading to La Camu. It is between the small wharf

North of "The-Hole-in-the-Wall" and the 2nd Stake Light. It is eight (8) metres off shore from high water mark and half a metre out of water at low water. Steamers pass over it when in the channel at high water. In the Skagit River, besides the snags and sawyers that are not constant dangers, there is a rock at the junction of the Browns Slough with the North Fork with two feet of water over it at low water during the Autumn and winter months.

A pilot is needed in crossing the Strait and in going up the Stillaguamish and Skagit Rivers, and up the Swinomish Slough. There are no regular pilots in this vicinity and the only place where one might be obtained is at Utsalady from one of the small steamers, if not engaged in towing or carrying supplies. In coming from seaward tow-boats will be found at the entrance of the Straits of Juan, or if sailing in at Port Townsend these tow-boats act as pilots. There are no regular pilot fees nor are they compulsory though there is a bill to that effect before

the Washington Legislature that may become a law. There are no harbor regulations in force.

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The main ship channel through the Bay is quite permanent, though the sand spit off Whidbey seems to be gradually making out from the drifts of the Rivers and there may be a slight shoaling off the mouth of Dungeness Bay from the same cause. The shallow channels across the flats are constantly changing, and the different passages up the Skagit change from year to year owing to dams being formed by log jams. The North Fork was closed just below its junction with the South Fork by one of these jams during this survey.

There seems to be a tendency to form a bar outside of Deception Pass just abreast the State Light.

The bottom in the Bay is mud and sand. In Deception Pass and Canoe Pass rocky, and outside the Pass sand & gravel.

The best anchorage is in Similk Bay inside of Skait Id. and between Skait Id. and Hape Id.

Vessels waiting for slack water to go through Discretion Pass may anchor just inside of Big Swift Id. on the East side, and off the North side of Whidby Id. abreast the Stake Light or Fidalgo on the West side. The latter anchorage may become quite rough with an abb current and a strong westerly drgn.

The question of dredging out the channel to and through the Swinomish Slough is being agitated, but as yet no active steps have been taken to that end.

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The tidal currents south of Seal Rocks set across the flats from the main channel on the flood and into it on the ebb, and up and down the channel on the whidby Id. side. At the mouth of Dugalle Bay the tides from Saratoga Passage and from Discretion Pass meet and form small eddies at half tide. In calm weather quantities of drift are seen floating

him, though it is taken out through the Pass on each ebb as the current runs flood through Saratoga Passage for an hour after the ebb current sets out through the Pass. The tidal currents as far as Dugalla Bay do not run faster than one quarter ($\frac{1}{4}$) to one (1) knot an hour; after passing Dugalla Bay they increase in velocity and attain a maximum in Desception and Canon Passes, where it boils and eddies at half tides and runs from five to six knots on a long run out. The set is mainly with the main channel, but a strong current comes round the East end of Hafu and Skait Is'ds. and sets to the w^s. on the ebb and strong eddies and big whirls are found around Little Snip and Stann Is'ds. on both ebb and flood. On the ebb an eddy is found in Swinomish Bay setting in along the North shore and out to the Is'd. The tidal currents in Swinomish Slough run to follow those in Deception Bay. In the channels across the flats the River currents on the ebb increase it to a velocity of two (2) to three (3) knots, and at the mouths

of the Stillaguamish and Skagit the River currents abate the flood during the freshet season, so that the tide will be rising in the vicinity whilst the current is running abt. During the freshet season that occurs in May and June the Skagit River is not affected by tides above Mt. Vernon. Observations made at the lower bridge of the N. Fork May 7, 1890 showed a rise and fall of four and a half ($4\frac{1}{2}$) inches. Observations made of the current of the N. Fork May 7th and 8th 1890 showed a velocity of three and two tenths (3.2) and three and four tenths (3.4) knots.

Captain Hartman of the steamer "Lily", who has had much experience with the currents of the Skagit River gave me the following information:— "The freshets occur during the Spring and early summer, the River gradually rising and attaining its maximum height & current in the early part of June. The mean height of River during the freshets is eight (8) feet above normal. The season of "Low River" is during the Autumn and winter

months the minimum depth and current occurring during the latter part of December and first half of January. At this season the tide rises and falls at Mt. Vernon four and a half (4 $\frac{1}{2}$) feet. A slight frost occurs during the month of November, but the River never reaches the height it attains in the Spring.

The tide tables for Port Townsend give a very fair guide for slack water at the mouth of Desolation Pass. The tide insidu falling for an hour after, and rising for an hour after the flood and ebb currents make through the Pass.

I

In comparing the results of this survey with the old charts on hand there seems to be a slight lessening of the depth in the main channel off the mouth of Dugalla Bay. The mud flats are making out between Seal Rocks and the Sacano Id's. in the direction of Hope Id. a shoal is forming on the north side of Similk Bay opposite Skagit Id. This formation is at

the point where the abb current splits and forms an eddy in the upper Bay. A bar runs to or forming outside of Desolation Pass opposite the Stake Light. The changes in the channels across the mud-flats have been noticed before.

8

Ice does not interfere with navigation in these waters.

Fogs, rolling in from the Straits of Juan de Fuca over Whidby Id. and through Desolation Pass, are not infrequent in the early morning, and occasionally last all day.

Smokes from forest fires and clearings are often so dense during the months of July, August and September as to greatly impede navigation. During these smoky days and also during fogs the steamers depend very much upon their whistles, their Masters and pilots become very expert in determining their position from the kind of echo heard on the neighboring shores.

The river freshets mentioned before

increase the currents in the rivers, but are considered by steamboat men as aids to navigation as it increases the depths over bars and sweeps out some of the snags.

9

The prevailing winds during the summer months are from N.W. and W.; from November till April S.E. to S.W.

Theaviest gales usually come from S.E. shifting to S.W., though during the winter months there is an occasional blow from the North that equals or surpasses the S.E. gales. These latter blows may not occur during an active winter but must be guarded against from November till April.

10

The only wrecks, known to have occurred in these waters, were due to hugging the Whidby Id. shore too closely during foggy or smoky weather, and the jamming against the rocky shores in Disruption Pass caused by the eddies and whirls making the helm of little use. Tugs with a boom of logs tow through the

Pass at slack water, but so quickly do the tidal currents turn, the after actions of a boom is liable to be caught by the flood current whilst the tug is trying to stem the ebb current, thus making it rather hazardous to attempt towing through long rafts.

There is usually no trouble to get vessels off after going ashore by lightening her cargo and waiting for tides, though the scattered boulders may cause a break. In the Pass it is usually the upper works that suffer the shores are so steep. On the flats it is only a wait for tides.

The nearest hospital for seamen is at Port Townsend where there is a U.S. Marine Hospital in charge a Surgeon, U.S.M.C. Service.

II

Vessels coming from seawards are boarded at Point Angeles, a sub-port of entry on the Straits of Juan de Fuca, or at Port Townsend, the port of entry for the whole district.

A vessel may go into the outer anchorage in Port Townsend Bay before receiving pratique.

12

Plenty of fresh water, of good quality, may be obtained from the wharf at Utsalady, and of a somewhat inferior quality at the wharf at Desolation P.o.

Supplies and ship chandlery of a limited amount may be obtained at Utsalady.

Coal can not be obtained. Many of the small steamers burn wood, and this can be obtained, in the form of slabs, at Utsalady, and limited quantities of split fir on the wharves at Desolation P.o. and Dimick Bay. If a large quantity of wood should be needed it would be necessary to engage it beforehand.

Slight repairs might be obtained at the shops of the Utsalady Mill, but any castings or heavy work would have to be done in Seattle or Tacoma.

13

At the end of the wharf at Desolation P.o. there is ten (10) feet of water. At the wharf in Dimick Bay eight (8) feet. The depth along the wharves at La Conner varies from ten (10) feet at the S. corner to zero (0) at the N. corner.

¹⁴
No cautionary signals are displayed, nor
lime ball dropped within sight of Skagit Bay.

15

The marist branch Hydrographic Office
is at Portland, Oregon.

16

The marist marine railway is at Seattle.
The marist dry-dock at Esquimalt in British
Columbia, a government dock.

17

Passenger streams pass through Skagit Bay
to the number of five or six a day, bound N.
and South, stopping at Mt. Vernon & Dickeyton P.
Connection is made at Mt. Vernon with a small
stream up the Stillaguamish River. Two stream
ers make weekly trips from Seattle up the
Skagit River touching at Mt. Vernon. A stream
er each day bound North and South touches or
meets a boat up to La Conner.

A railroad is built from Seattle to Ham-
ilton on the Skagit River. This line crosses both
the Stillaguamish and Skagit Rivers to the E.
beyond the limits of this sheet. The road from

Hamilton to Anacortes crosses the Swinomish Slough two (2) miles above the work dam on the slat. An electric road is being built connecting Anacortes with Deception P.O.

Post Offices are established at Utsalady, Deception, La Conner, Mt. Vernon, Stanwood and several small places on the Skagit and Stillaguamish Rivers.

Telegraphic communication may be had at Utsalady, Stanwood, and La Conner, all private lines.

18

The nearest custom house is at Port Townsend, Jefferson Co. Wash.

19

The largest town within the limits of this slat is La Conner on the Swinomish Slough; it is a supply town for the dryland farms on the flats and the delta of the Skagit. Shippers daily North and South.

Utsalady is the site of a large ^{new} mill and furnishes supplies to logging camps around the Bay and up the Rivers and to small ranches on Whidby Id. near the Bay. A general trading

boat for all streams going N. and S. through the Bay.

Stanwood near the mouth of the Stee-guanish furnishes supplies to the ranches in that vicinity. Daily steamer to & from Woodland Mt. Vernon and several small settlements on the Skagit River supply neighboring ranches weekly steamer to Seattle.

Douglas P.O. on the South side of Fidalgo Id. is a small village supplying its immediate vicinity. Daily steamer North and South and soon by electric road to Anacortes.

About half a dozen houses and the printing office of the "Washington Farmer" is called by the people their Gibraltar. This place is about two miles East of Douglas. Communication by County road with Douglas.

20

Keeps covers the rock on the S.W. side of Little Snuff Id., ~~on~~ the ledge in the right N. of Little Snuff, and swings the shore just to seaward of Canon Pass. This keep is only seen at slack water as the swift currents

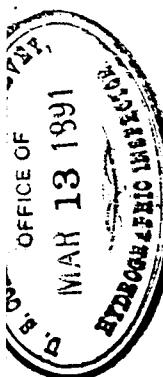
sweeps it under at other stages of the tide. Stray pieces of reefs will be found along the shores and on the inside of Seal Rocks. It only indicates a rocky bottom and such dangers as have been mentioned. Much of it has ^{is} been swept away by winter gales and grows again during the summer months.

21

An attempt seems to be made by the people around Similk Bay to change the name of Disruption Pass to Gibraltar Pass and small compiled maps are issued with the Pass under that name. They say the name as now given is injurious to the prospects of places on that Bay.

Disruption P.O. is known locally as Gidalgoo City. I was unable to find out by what authority the change was made.

Skait Id. is known locally as Little Hope Id. The rocks off the mouth of Dugaldor Bay as Seal Rocks. I have applied the name throughout this report only to distinguish them. During the progress of this survey I never saw a



Copy J.

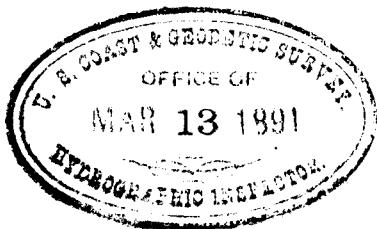
39

real upon them.

The two small I'd's. on the starboard side of the channel leading to La Cannon run to have no local name, I named them for convenience only, Islands No. 1 and No. 2.

The most western of the two large I'd's south and east of I'd's. No. 1 and No. 2 is known locally as Goat I'd. and the Easterly one as Ika. I'd.

The Southern entrance to the Swinom Slough is known to all steam-boat men to pass in this vicinity as "The Hell-in-the-



Very respectfully
J. A. Jordan, Lieut. usn

Comdg. "Carnet"

Forwarded and the attention of the Superintendent is respectfully called
Chas. M. Thomas - Comd'r., U. S. N. to the thoroughness of this ad-
mirable report. I would suggest that the very full
and detailed remarks ^{in the two special reports} on the subject of Currents be
clered to the tidal division -